MM 360: 3-DGraphics and Animation

Course Syllabus Spring 2007

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Office Hours: MWF 1:00 to 1:50
TTh 11:00 to12:30
and by appointment

Note that I may be in BH 123 or LH 235 during office hours.

About this Course (Catalog Description)

Introduces the use of three dimensional computer modeling tools for the creation of still and moving images. Topics include spline editing, virtual lighting, and rendering.

Prerequisites

MM 327, Introduction to Computer Graphics Applications, or consent of instructor. Junior Standing.

Outcomes

Upon completion of this course, students will:

- Describe the process of creating and rendering a scene using three-dimensional modeling software;
- Demonstrate understanding of and show facility with modeling objects
  ° using geometric primitives;
  ° using spline extrusion;
  ° using spline lathing (sweeping);
- Demonstrate the use of different types of virtual lighting;
- Apply shaders and modifiers such as refraction and reflection;
- Demonstrate an understanding of vertex modeling;
- Construct and render realistic and fantastic three-dimensional scenes; and
- Use simple key-frame animation to animate a three-dimensional scene.

Required Materials

Text: Kerlow, I. (2004): The art of 3-D computer animation and effects. Hoboken, NJ, Wiley & Sons.

Portable storage (memory stick or rewritable CD/DVD).

Course Activities

Class activities will include lectures and demonstrations as well as hands-on work in the multimedia lab (LH 235). Quizzes will give students a measure of how well they are grasping the main ideas covered in class, and exercises will allow students to develop skill in applying new ideas. Projects will allow students to apply the skills and concepts to create original work. A final exam will provide a measure of overall retention and comprehension of course material.

Policies

Attendance in this class is crucial. Although attendance is not a formal component of your grade, missing class will probably result in diminished performance on projects, quizzes, and the exam. Presence for software demonstrations will save you much work.

Assignments: Don't expect to finish assignments in class! Work through lab activities during the class time allowed for them and work on exercises and projects outside of class. As you work on exercises, build a library of objects that you might be able to use for projects. Be prepared to spend time waiting for projects to render—3-D graphics require an enormous amount of work from the computer.

When each exercise or project is assigned, its due date will be announced. Late exercises will receive half credit if turned in by the next class, none afterward.

Save all returned assignments, and keep a copy of each exercise and project—unmodified—as insurance.

Frequent short **quizzes** over lecture and exercises will provide feedback to let you determine if you are assimilating enough detail in course topics. You may drop one quiz grade. Quizzes may assume the form of paper-and-pencil tests of conceptual knowledge or hands-on challenges in the lab. Quizzes may be made up only if I deem the documented excuse valid.

If you have any questions, comments, concerns, or suggestions, please feel free to write them on a slip of paper and leave it on the lectern (or hand it to me) when the class breaks. Your feedback may help improve the course.

The Multimedia Lab is available for students to use while working on graphics and multimedia projects. Use of this facility is a privilege, not a right. The lab is expensive to maintain. Please abide by all posted rules (and announced updates. In particular, keep the room clean, don't abuse the equipment (beating a computer doesn't make it work better) and do not install any software, including messaging programs. Failure to use the lab properly may result in grade penalties, expulsion from the lab or legal action.

Academic Misconduct

Eastern Oregon University places a high value upon the integrity of its student scholars. Any student found guilty of an act of academic misconduct (including, but not limited to, cheating, plagiarism, or theft of an examination or supplies) may be subject to having his or her grade reduced in the course in question, being placed on probation or suspended from the university, or being expelled from the university—or a combination of these. Please see Section II of the *2002-2003 Student Handbook and Planning Calendar: Campus Citizenship (Academic), p. 32ff; Campus Citizenship (Behavior), p.41ff*.

Students with Disabilities

If you have a documented disability or suspect that you have a learning problem and need reasonable accommodations, please contact the Disability Services Program in Loso Hall 234 (telephone 962-3081) **before** the end of the second week of classes.

Grading

Your final grade for this course will depend on your completion of the assigned homework and projects, quizzes, and two exams. All activities will measure your ability to apply the concepts introduced in the text and class lectures. Distribution of credit is as follows:

Projects:	35 percent
Exercises	15 percent
Quizzes:	20 percent
Final Exam:	30 percent

Grade cutoffs will be no higher than 92 for A, 84 for B, 75 for C and 65 for D, but *may be lower* based on a statistical analysis of the score distribution.

Course Outline (Tentative*)

Week	Topics	Reading
1	Course intro.; 3-D Modeling Interface; Thinking in 3-D Working by the Numbers to position and move objects	Skim Ch. 2 3.1–3.4, 3.6
2	Modeling with Basic Geometric Primitives; Positioning, Aligning and Combining Objects	4.3
3	Boolean Operations on Objects Basic Lighting; Scene Construction	6.1, 6.2
4	Spline Objects: Extrusion	4.1, 4.2
5	Spline Objects: Lathing	4.4
6	Material Properties , Texture Mapping	9.1–9.4
7 .	More on Lighting, The Camera	7.1–7.4; 8.1–8.4
8	Vertex Modeling	4.5
9	Adding Motion	
10	Project Show and Course Review	

* Schedule is subject to change based on class dynamics.